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BI-MONTHLY PROGRESS REPORT NO. 6

TO: Mr. Barry S. Drucker, Physical Scientist, Contracting Officer's Technical Representative (COTR), U. S. Department of Interior Minerals Management Service (MMS), Sand and Gravel Program, 381 Elden St., Mail Stop 4010, Herndon, VA 20170-4817
CC: via email - Kim Zarillo, Contract Manager, S.E.A.
FROM: Dr. Jeff Reidenauer, Technical Program Manager, The Louis Berger Group, Inc. 30A Vreeland Road, Florham Park, NJ 07932
DATE: October 1, 2006
SUBJECT: Bi-Monthly Progress Report No. 6 for Contract No. 1435-01-05-CT-39075 Biological Characterization/Numerical Wave Model Analysis within Identified Borrow Sites Offshore the Northeast Coast of Florida

1. Summary of Work Accomplished and Progress Status of Project Items and Tasks

The contract award date was August 15, 2005. This report covers the period from August 1 to September 30, 2006.

- **Item 3 (Task 3): Program development to address biological and physical issues associated with the use of potential sand borrow areas offshore of the northeast coast of Florida –** Work continues on samples collected from the 2006 spring event. Samples are being processed and analyzed. Identification of benthic species from the 2005 fall field event and the spring 2006 continues. Model runs of the project shoal areas and possible areas of shoreline impacts are approximately 75% complete. Analysis of potential impacts indicated by model results from storms and over the longer term impacts is underway. A brief summary of results to date is given below under Summary and Interpretation of Technical Findings.

Deliverables from Tasks 4, 5, and 6 will be divided into two categories technical and non-technical:

- **Item 4 (Task 4): Preparation of the Draft and Final Technical Manuscript and Item 5 (Task 5): Draft and Final Technical Summaries --** Drafts of various sections will be provided during Item 3 (Task 3) as analyses are completed and results synthesized. A draft section of the geological existing data is complete. The complete draft is due April 2007.

- **Item 6 (Task 6): Submission of Draft and Final Non-Technical Summaries** -- Drafts of various sections will be provided during Item 3 (Task 3). The complete draft is due April 2007.

- **Item 7 (Task 7): Submission of Draft Scientific Paper and Paper to Refereed Journal** -- A draft scientific paper is due November 2007.

- **Item 8 (Task 8): Presentation at MMS Information Transfer Meeting or Other Scientific, or Technical Conferences, or Meetings –** Drs. Zarillo, Shenker, and Reidenauer presented preliminary results of the current study at the ITM conference held June 20-22, 2006 in Melbourne, Florida.

- **Item 9 (Task 9): Bi-Monthly Progress Reports --** This is Progress Report 6 of 16 to be completed over the 32 month contract.

- **Item 10 (Task 10): Presentation Slide Sets --** A draft slide set is due July 2007.

- **Item 11 (Task 11): Spatial Data Files --** Data files are due October 2007.

- **Item 12: Program Management and Control Requirements** -- The Technical Program Manager and/or Contract Manger maintains ongoing communication with the COTR and PIs. The Contract Manager is tracking costs and keeping within budget.

- **Item 13: Data Management** -- The Contract Manager coordinated with PIs to complete a draft and final data management plan. The Data Management Plan for MMS Biological Characterization/Numerical Wave Model Analysis within Identified Borrow Sites Offshore the Northeast Coast of Florida Contract No. 1435-01-05-CT-39075 was completed in October 2005. The Contract Manager and TPM are coordinating ongoing data transfer.

2. Significant Problems Encountered

No significant problems have been encountered to date.

3. Summary and Interpretation of Technical Findings

Model runs simulating northeaster type storms show that cumulative impacts were small but detectable in cases involving multiple dredge cuts over borrow sites A4 and A6. Similar results were found for borrow sites A8, A9, and B11 when multiple borrow cuts were placed in model topography. Potential impacts from cumulative dredge cuts were evaluated using two model grids, one covering the A4 and A6 sites and the other grid covering the A8, A9, and B11 sites. Over a yearlong simulation that included several significant storms as well as fair weather conditions some differences in wave and current generated sand transport rates and net topographic changes were noted along small sections of coastline. To further evaluate the potential for impacts an additional model run was launched for each project area representing two years of real time. Results of the two year simulation will be summarized in the next progress report. Model runs based on single borrow cuts from each shoal area have been competed. Results of these runs indicate no significant impacts at the shoreline. However, further analysis of predicted sand transport rates is underway to quantify the results. Analysis of historical shoreline positions in the project is underway and will be completed within approximately one month. Results of this analysis will be used to characterize coastal change

and compared to trends of coastal indicated by model results. This will provide a check on the model calibration of littoral transport rates and predicted topographic changes on the shoreface. Analysis of bathymetric change over selected shoals in Federal waters off the northeast coast of Florida has been completed. Results indicate little if any change in shoal topography over the period of record and within the limits of data accuracy and resolution. However, it is noted that the availability of repeated surveys over time from the same shoal fields is very limited.

4. Summary of Significant Meetings

None at this time.

5. Summary of Scheduled Work for the Next Two Months

Work will proceed on **Item 3 (Task 3).** Analysis will proceed of benthic, plankton, fish and sediment samples collected during the spring 2006 field event. A field report will be provided of the results.

Over the next two months the results of long-term model runs will continue to be examined for potential effects of dredge cuts at borrow areas on the shoreline. The results of the shoreline analysis and historical bathymetric changes will be completed and prepared for inclusion in the final technical report.

6. Summary of MMS Questions and Resolution

None at this time.